

A family of isolated and purified proteins and nucleic acids are disclosed. Particularly, *piwi* family proteins and cDNAs encoding the same are disclosed. Recombinant host cells, recombinant nucleic acids, recombinant proteins and transgenic animals are also disclosed, along with methods of producing each. Isolated and purified antibodies to *piwi* family homologs, and methods of producing the same, are also disclosed. *piwi* family gene products are characterized as having activity in the growth, proliferation and self-renewing division of stem cells, and proliferation of primordial germ cells. Thus, therapeutic, screening, culturing and transgenic methods involving these activities are also disclosed.